RTO WEST APPENDIX D

ANCILLARY SERVICES

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APPENDIX D

: ANCILLARY SERVICES

D.1 OVERVIEW OF ANCILLARY SERVICES

D.1.1 Regulation Service

Ancillary Service[1]

a) As provided by the RTO to SCs: the coordinated adjustment by the RTO of generation capacity on a second-to-second basis in real-time in order to continuously balance generation and Demand within the RTO Control Area, thereby maintaining Area Control Error, system frequency and interchange with non-RTO Control Areas within acceptable limits.

Interconnected Operating Service Resource[2]

b) As provided by an SC to the RTO: the provision of generation capacity that the RTO can use for the purpose of continuously balancing generation and Demand within the RTO Control Area.

D.1.2 Load Following Up Service

Ancillary Service

a) As provided by the RTO to SCs: the coordinated adjustment by the RTO of block-loaded resources in real-time in response to net increases in demand in the RTO Control Area.

Interconnected Operating Service Resource

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1 Ancillary Service: are the services provided by the RTO to the SCs.
2 Interconnected Operating Services Resource: are the sources which supply the RTO with the ability to supply ancillary services

b) As provided by an SC to the RTO: the provision of generation or demand-side capacity that can be block-dispatched by the RTO in real-time to respond to net increases in demand in the RTO Control Area.

D.1.3 Load Following Down Service

Ancillary Service

a) As provided by the RTO to SCs: the coordinated adjustment by the RTO of block-loaded resources in real-time in response to net decreases in demand in the RTO Control Area.

Interconnected Operating Service Resource

b) As provided by an SC to the RTO: the provision of generation or demand-side capacity that can be block-dispatched by the RTO in real-time to respond to net decreases in demand in the RTO Control Area.

D.1.4 Spinning Reserve Service3

Ancillary Service

a) As provided by the RTO to SCs: the coordinated adjustment by the RTO of synchronized resources in real-time in response to loss-of-resource contingencies on the Grid.

Interconnected Operating Service Resource

b) As provided by an SC to the RTO: the provision of generation capacity that is synchronized to the Grid and able to respond immediately to the

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3Reserves. Reserves are the unloaded generating capacity, interruptible load, or other on-demand rights that the control area is able to fully deploy within 10 minutes of a power system disturbance and that are capable of being used to serve load on a sustained basis for up to one hour. Reserves include both spinning reserves and non-spinning reserves. The RTO West will adhere to reserve definition(s) as stated by the Western Systems Coordinating Council (WSCC) Minimum Operating Reliability Criteria (MORC) which is subject to periodic revision.

RTO's real-time instructions in the event of a loss-of-resource contingency on the Grid.

D.1.5 Non-Spinning Reserve Service

`Ancillary Service`

a) As provided by the RTO to SCs: the coordinated adjustment by the RTO of resources, which may or may not have been synchronized to the Grid prior to the RTO's dispatch instructions, in real-time in response to loss-of-resource contingencies on the Grid.

`Interconnected Operating Service Resource`

b) As provided by an SC to the RTO: the provision of generation or demand-side capacity that can be made available on short-term notice to respond to the RTO's real-time instructions in the event of a loss-of-resource contingency on the Grid.

D.1.6 Replacement Reserve Service

`Ancillary Service`

a) As provided by the RTO to SCs: the coordinated adjustment by the RTO of generation or demand-side capacity which can made available to the RTO on sixty minute notice, to enable the RTO to maintain adequate capacity in the RTO's Balancing Energy stacks.

`Interconnected Operating Service Resource`

b) As provided by an SC to the RTO: the provision of generation or demand-side capacity that can be made available to the RTO on sixty minute notice, to respond to the RTO's instructions to provide or consume Balancing Energy.

D.1.7 Congestion Redispatch Service

`Interconnected Operating Service Resource`

a) The provision, by an SC to the RTO, of dispatchable blocks of energy from generation or demand-side resources, for use by the RTO during the RTO's Day-Ahead Scheduling Process or the RTO's Schedule Adjustment Process to enable the RTO to eliminate residual congestion prior to real-time.

D.1.8 Supplemental Energy Service

Interconnected Operating Service Resource

a) The provision, by an SC to the RTO, of dispatchable blocks of energy from generation or demand-side resources, for use by the RTO in real-time to eliminate real-time congestion and to provide Balancing Energy Service.

D.1.9 Balancing Energy Service

Ancillary Service

a) The RTO's coordinated use of Ancillary Service resources - including Regulation, Load Following Up, Load Following Down, Replacement Reserve, Supplemental Energy, and to a limited extent, Spinning Reserve and Non-Spinning Reserve (for the period of time during which these two types of resources are dispatched in response to a contingency) - in real-time to deliver energy to, or acquire energy from, each SC's account in order to balance each SC's account on a periodic (ten-minute) basis.

D.1.10 Voltage Support Service

Ancillary Service

a) As provided by the RTO to SCs: the coordinated scheduling by the RTO of generation resources to maintain transmission voltages within acceptable limits throughout the Grid.

Interconnected Operating Service Resource

b) As provided by a Generator or an SC to the RTO: the provision of generation capacity whose power factor and output voltage level can be scheduled by the RTO to maintain transmission voltages within acceptable limits throughout the Grid.

D.1.11 Black Start Service

Ancillary Service

a) As provided by the RTO to SCs: the procurement by the RTO, and emergency dispatch by the RTO pursuant to emergency restoration plans, of generation resources which are capable of self-starting without support from the Grid in the event of a blackout, in order to restore the Grid to a secure operating state.

Interconnected Operating Service Resource

b) As provided by a Generator or an SC to the RTO: the provision of generation resources which are capable of self-starting without support from the Grid in the event of a blackout.

D.1.12 Scheduling and Dispatch Service

Ancillary Service

a) The RTO's: (i) receipt, validation, coordination, adjustment and acceptance of scheduling information from SCs, in order to develop a secure Operating Plan for the Grid; and (ii) monitoring, control and redispatch of transmission and generation resources to operate the Grid within Applicable Reliability Criteria.

RESPONSIBILITIES OF THE RTO AND SCS

The RTO shall secure rights to control sufficient quantities of resources, through the procurement processes specified in this Appendix and when necessary the procurement process specified in Appendix C of the RTO

Tariff,[4] to enable the RTO to operate the grid in compliance with Applicable Reliability Criteria.[5] The quantities of Ancillary Services secured by the RTO shall comply with the standards specified in Section D.3

Pursuant to the provisions of Appendix D, the RTO is authorized to procure, from SCs, resources capable of providing the following services to the RTO:

Regulation Service

Load Following Up Service

Load Following Down Service

Spinning Reserve Service

Non-Spinning Reserve Service

Replacement Reserve Service

Congestion Redispatch Service

Supplemental Energy Service

Voltage Support Service

Black Start Service.

SCs are encouraged to satisfy their Ancillary Services obligations by self-providing resources capable of meeting the RTO's Ancillary Services requirements. To the extent that SCs do not self-provide sufficient quantities of resources to the RTO, the RTO shall procure any additional resources it requires during the Day-Ahead Scheduling Process, the Schedule Adjustment Process, or in Real-time; with the exception of resources capable of providing Voltage Support Service and Black Start

4 Note: need to move the text describing the additional procurement processes - for acquisition of additional ancillary services in real-time or in response to System Insufficiencies - to the text of this Appendix. The language is currently elsewhere.

5 This term needs to be a defined term defined in Appendix ?.

Service, which the RTO may procure through longer-term contracts or agreements.

"Self-provision" is the satisfaction of all or a part of an SC's Ancillary Service obligation by the SC's provision to the RTO of suitable control over the capacity and/or the energy output of SC-designated resources, thereby enabling the RTO to reduce the amount of Ancillary Service resources which the RTO would otherwise be required to acquire through the RTO's Ancillary Service procurement process.

An SC may self-provide Ancillary Services using resources for which the SC is the Scheduling Coordinator, or using resources provided by another SC through an inter-SC trade of Ancillary Services. Such resources must have previously been certified by the RTO as capable of providing the designated Ancillary Service(s).

The RTO shall, as a provider of last resort, make the following Ancillary Services available to all users of the Grid:

Regulation Service

Load Following Up Service

Load Following Down Service

Spinning Reserve Service

Non-Spinning Reserve Service

Replacement Reserve Service

Congestion Redispatch Service

Balancing Energy Service

Voltage Support Service

Black Start Service

Scheduling and Dispatch Service.

Each SC shall pay the RTO for that portion of the SC's allocated share of each of the Ancillary Service obligations that the SC does meet through self-provision. The RTO shall bill each SC for the SC's net obligations in two stages.

In the first stage, the SC shall be charged based on estimated data, using the schedule information submitted by the SC, as part of the daily settlement process.

In the second stage, the RTO shall settle with SCs based on actual meter data, as part of the monthly settlement process. The daily settlement process and monthly settlement processes are specified in Appendix (G?).[6]

The RTO shall not discriminate, in technical qualification criteria, scheduling, dispatch, compliance monitoring or any other way, between resources on the basis of whether they have been self-provided or procured directly by the RTO.

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6 Note: Need to make sure that Appendix (G) conforms to this two-step process, in which SCs are first charged for estimated uses of Ancillary Services (this settlement can be done daily, based on schedules); and two months later are charged or credited a true-up amount based on the difference between actual demand and scheduled demand. Without this two step process, large amounts of credit would have to be floated for months. An additional part of this process - needed to avoid creating incentives to under-schedule in order to make money from the two month "float" - is to also charge/credit the SCs for the time value of the month based on the difference between actual and scheduled quantities.